We claim:

1. In a switching system having n ports with each of the ports being coupled to a local area network via a Hub, the connectivity between the inputs and outputs of the n ports forming first and second matrixes of cross points, each cross point in the first matrix establishing a unilateral communication path from a source port to a destination port, each cross point in the second matrix providing a complementary connection from the destination port to the source port, a method of establishing a transmission operation from a Hub (i) coupled to a source port (i) to a Hub (j) coupled to a destination port (j), the method comprising the steps of:

a) activating a cross point B(j, i) in the second matrix to establish a first unilateral path from the destination port (j) to the source port (i);

b) detecting, via the first unilateral path connection from the destination port (j) to the source port (i), whether the Hub (j) is idle; and

c) generating collision signal, at the source port (i) when the Hub (j) is not idle.

2. The method of claim 1, further comprising the step of:

d) activating a cross point A(i, j) to establish a second unilateral path connection from the source port (i) to the destination port (j) when the Hub (j) is idle.

3. The method of claim 2, further comprising the step of:

e) transmitting the packet from the source port (i) to the Hub (j) through the second unilateral path.

4. The method of claim 1 wherein step a) further comprises employing a control circuit to activate the cross point B(j, i) in the second matrix.

5. The method of claim 2 wherein

step a) further comprises employing a control circuit to activate the cross point B(j, i) in the second matrix; and

step d) further comprises employing the control circuit to activate the cross point A(i, j) in the first matrix.

6. The method of claim 4, wherein step a) further comprises:

providing to the control circuit a destination address for the destination port (j);

comparing the provided destination address with a built-in destination address within the control circuit; and

activating the cross point B(j, i) when the provided destination address matches the built-in destination addresses.

7. In a switching system having n ports with each of the ports being coupled to a local area network via a Hub, an arrangement for establishing connectivity between the inputs and outputs of the n ports, comprising:

a) a first matrix of n x n cross points, each first matrix cross point establishing a unilateral path between two of the n ports;

b) a second matrix of n x n cross points, each second matrix cross point establishing a unilateral path between two of the n ports;

c) a control circuit associated with a first cross point of the first matrix and a complementary cross point of the second matrix, the first cross point operable to establish a unilateral path from a source port (i) to the destination port (j), the complementary second cross point operable to establish a unilateral path from the destination port (j) to the source port (i).

8. The arrangement of claim 7 further comprising a port interface circuit coupled to the source port (i), the port interface operable to:

cause the control circuit to cause the complentary cross point to establish the unilateral path from the destination port (j) to the source port (i); and

monitor the destination port (j) to determine if a Hub (j) coupled to the destination port (j) is idle when the complementary cross point has established the unilateral path from the destination port (j) to the source port (i).

9. The arrangement of claim 8, wherein the port interface circuit is further operable to cause the control circuit to cause the first cross point to establish the unilateral path from the source port (i) from the destination port (j) if the Hub (j) is determined to be idle.

10. The arrangement of claim 7 wherein each of the n ports includes a port transmit line defining a row in the first matrix and a port receive line defining a column in the first matrix.

11. The arrangement of claim 7 wherein:

the second matrix comprises n row lines and n column lines;

each second matrix row line is coupled to a first matrix column line; and

each second matrix column line is coupled to a first matrix row line.

12. The arrangement of claim 10 wherein the control circuit is operably coupled to the port transmit line of port (i).

13. The arrangement of claim 12 wherein the control circuit is operable to receive address information over the port transmit line of port (i), and wherein the control circuit is operable to cause the second cross point to establish the unilateral path from the destination port (j) the source port (i) responsive to receiving the address information.

14. The arrangement of claim 12 wherein the control circuit is further operable to receive operational information over the port transmit line of port (i), and wherein the control circuit is operable to cause the complentary cross point to establish the unilateral path from the destination port (j) the source port (i) responsive to receiving the address information and the operational information.

15. The arrangement of claim 13 wherein the control circuit is further operable to receive additional information over the port transmit line of port (i), and wherein the control circuit is operable to cause the first cross point to establish the unilateral path from the source port (i) to the destination port (j) responsive to receiving the additional information.

16. The arrangement of claim 15 wherein the additional information includes additional address information.

17. The arrangement of claim 16 wherein the additional information includes additional operational information.

18. In a switching system having n ports with each of the ports being coupled to a local area network via a Hub, a switching arrangement comprising:

a) a first matrix of cross points, each cross point selectively and controllably connecting one of n port transmit lines to one of n port receive lines, thereby establishing a unilateral communication path from a source port to a destination port; and

b) a cross point control circuit operably coupled to controllably activate an associated cross point of the first matrix, the associated cross point connecting a select port transmit line and a select port receive line, the cross point control circuit further operably coupled to the select port transmit line to receive cross point control information therefrom, the cross point control circuit operable to activate the associated cross point responsive to cross point control information therefrom.

19. The switching arrangement of claim 18, further comprising a multiplexer having an output coupled to the select port transmit line, a first input connected to a source of cross point control information, and a second input connected to a source of packet data to be transmitted via the associated cross point.

20. The switching arrangement of claim 18, a first input connected to a source of cross point control information, and a second input connected to a source of packet data, and a third input connected to a source of delayed packet data.